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ence of density between the liquid in the intercellular passages and that contained in the cells; therefore it will take place more energetically in the superior half, where is the lighter fluid; and as the elasticity depends upon the energy of endosmose, the upper portion will, according to its nature, curve with greater force, while the elasticity of the lower part will be lessened. This explanation acquires increased weight from the fact that the specific gravity of the most depending portions of stems and roots growing horizontally in the dark, is greater than that of the upper.

But we have stronger arguments in favour of the supposition that gravity is essentially connected with the several directions of stems and roots. These directions take place naturally in the "line of gravity," that is, parallel to a line drawn from the centre of the mass towards the centre of the earth; at the same time it is to be remarked, that although roots grow in the direction of gravity, that is, towards the centre of the earth, stems grow in exactly the opposite way. An experiment made by Mr Knight has been repeated by different philosophers, to determine whether these directions of stems and roots bear to other physical laws the same relation they do to gravity. Seeds permitted to germinate in wet moss were attached to the circumference of a wheel made to revolve constantly in a vertical manner; under these circumstances the roots grew outwards, away from the circumference of the wheel, and the stems towards its centre; the roots were thus found to obey the centrifugal force, and the stems the centripetal; but while the wheel revolved vertically, gravity and the centrifugal force were operating in the same direction. It was necessary to cause them to act in different directions, and for this purpose the wheel was made to revolve horizontally: in this case the centrifugal force acted at right angles to the line of gravity, and it was accordingly found, in obedience to the law of the composition of forces, that the roots no longer grew towards the centre of the earth, nor towards the circumference of the wheel, but in a plane between these two forces; and the angle which they formed with the line of gravity could be rendered more or less acute by increasing or diminishing the velocity with which the wheel rotated. It was thus made evident that roots and stems were influenced by physical laws, although growing in opposite directions.

We have thus shown why roots grow downwards and stems towards the heavens: in the dark these things arise through the influence of gravity controlling endosmose, and thus producing the proper incurvations of the parts of stems and roots. Under the influence of light the same phenomena more energetically arise from the agency of this element over vegetable growth.

J. A.

THE LADY WITH THE SPECTACLES.

BEAUTY in spectacles is like Cupid in knee breeches, or the Graces with pocket handkerchiefs—an excrescence of refinement; an innovation of the ideas which spiritualize woman into a goddess; a philosophical blossom of the "march of mind." Beauty in spectacles! and has it come to this? Burke said that the age of chivalry was past, and publishers say that the age of poetry has followed it; powder and periwigs destroyed the one, and spectacles have gone far to annihilate the other. Think of the queen of beauty of some tournament—thanks to my Lord Eglintoun for making such words familiar to us—looking on the encountering knights through a patent pair of spectacles!—picture to yourself a beautiful and romantic young lady parting from her lover, taking the "first long lingering kiss of love," as pretty Miss Pardoe terms it, and just imagine the figure the spectacles would cut in such an encounter; think of Mary Queen of Scots, Lady Jane Grey, Scott's "Jewess," or Shakspeare's "Lady Macbeth," with such appendages! think of a heroine in a novel taking off her spectacles to shed "salt tears" for her lover's absence, or in the emotion of a distressing juncture throwing herself at the feet of some obdurate tyrant, breaking the lenses of her "sight preservers;" think of all this, and judge of the effect which spectacles, as an ornament, have upon romance. Beauty has three stages—the coy, the dignified, and the intellectual. The first exists until about twenty, the second until twenty-five, and the last until beauty has made unto itself wings and flown away. It is in this last stage that women wear spectacles. The symptoms of spectacles begin at an early age. The young Miss has a primness, a staidness, and a miniature severity of aspect, at

variance from her years. They never seem young; there is no freshness of heart in them: they become women faster than other girls, and become old faster than other women; they are remarkable for thin lips, sharp noses, and white artificial teeth. They are walking strictures upon human life—bleak visions of philosophy in petticoats—daughters, not it would seem of love, but of Fellows of the Royal Society! They are fond of phrenology and meetings of scientific associations. They like a good pew in church, and write long letters to their unfortunate "friends in the country." They are generally spinsters, or, if married, motherless. No young wife with "six small children" ever wore spectacles. They go a good deal into company, where they are seen seated on sofas talking to ladies older than themselves, or turning over the leaves of a book, and with interesting abstraction poring over it. They dance quadrilles, but never waltz. Heaven and earth! think of a pair of spectacles whirling in a waltz. They have a genius for the "scholastic profession," and frequently exercise it as amateurs; "never eat suppers;" and are, many of them, members of the Horticultural Society. The lady with the spectacles! Half a century ago this would have been understood to refer to some one stricken in years, but now-a-days infirmity of eye-sight has been raised to the rank of a charm. The moment spectacles become really useful they are abandoned; it is the harmonious combination of youth and short-sightedness which gives beauty to the guise. Intense interest is expected to be felt towards her, who, still young and lovely, abandons the frivolities of her sex for the calm secluded pleasures of intellect. This is the point our heroines aim at. But we have done with them. They may be very good in their way, but their ways are not as our ways. Flirts, coquettes, prudes, and a host of other orders into which the sex are classified, have their failings, but they, at least, are women; while the "lady with the spectacles" seems hardly a daughter of Eve, but a mysterious being; a new creation, come into the world to gladden the lovers of modern science, and patronise the house of Solomons and Co. —*Court Gazette.*

MARRIAGE.—It is the happiest and most virtuous state of society, in which the husband and wife set out early together, make their property together, and with perfect sympathy of soul graduate all their expenses, plans, calculations and desires, with reference to their present means, and to their future and common interest. Nothing delights me more than to enter the neat little tenement of the young couple, who within perhaps two or three years, without any resources but their own knowledge or industry, have joined heart and hand, and engage to share together the responsibilities, duties, interests, trials, and pleasures of life. The industrious wife is cheerfully employing her own hands in domestic duties, putting her house in order, or mending her husband's clothes, or preparing the dinner, whilst, perhaps, the little darling sits prattling upon the floor, or lies sleeping in the cradle—and everything seems preparing to welcome the happiest of husbands and the best of fathers, when he shall come from his toil to enjoy the sweets of his little paradise. This is the true domestic pleasure, the "only bliss that survived the fall." Health, contentment, love, abundance, and bright prospects, are all here. But it has become a prevalent sentiment, that a man must acquire his fortune before he marries—that the wife must have no sympathy, nor share with him in the pursuit of it, in which most of the pleasure truly consists; and the young married people must set out with as large and expensive an establishment as is becoming those who have been wedded for 20 years. This is very unhappy. It fills the community with bachelors, who are waiting to make their fortunes, endangering virtue and promoting vice—it destroys the true economy and design of the domestic institution, and it promotes idleness and inefficiency among females, who are expecting to be taken up by a fortune, and passively sustained, without any care or concern on their part—and thus many a wife becomes, as a gentleman once remarked, not a "help-mate," but a "help-eat." —*Winslow.*

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